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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/785,384	02/23/2004	Georg Ockenfuss	78378 (18-74 US)	6510

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EXAMINER	
FINEMAN, LEE A	

ART UNIT	PAPER NUMBER
2872	

DATE MAILED: 05/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/785,384	OCKENFUSS ET AL.	
	Examiner	Art Unit	
	Lee Fineman	2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 February 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11 and 22-35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,8-11,22,25,30,31 and 33-35* is/are rejected.

7)☒ Claim(s) *5-7, 23-24, 26-29 and 32* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *2/23/04 & 2/27/06* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This Office Action is in response to an amendment filed 27 February 2006 in which claims 1, 8-9, 30-31 and 33 were amended, claims 34-35 were added and claims 12-21 were cancelled. Claims 1-11 and 22-35 are pending.

Drawings

1. A new drawing (fig. 6) was received on 27 February 2006. This drawing is acceptable.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-4, 8, 10, 22, 25, 30 and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Saito et al., US 2002/0125464 A1.

Regarding claims 1, 4 and 10, Saito et al. disclose an infrared (IR) filter (pages 10-11, section [0051]) comprising: a substrate (page 11, section [0054], line 9) an optical filter stack disposed on a first surface of the substrate (page 11, section [0054]), the optical filter stack including a plurality of dielectric layers (page 11, section [0054], line 8-10), and a plurality of metal layers (page 11, section [0054], line 8-10) alternating with the dielectric layers; wherein the plurality of metal layers comprises at least four metal layers (page 11, section [0054], line 14-16); wherein the infrared filter obtains an average transmission greater than or equal to 75%

between 400 nm and 600 nm (page 11, section [0054], line 3-4); wherein the average transmission is not less than 80% between 400 nm and 600 nm (page 11, section [0054], line 3-4); and wherein the substrate comprises a birefringent material (page 11, section [0054], lines 16-21, in at least so far as any impurities/stresses in the glass substrate will make it slightly birefringent).

Regarding claims 2-3, 22, 25 and 30, Saito et al. further disclose wherein the metal layers comprise silver (page 11, section [0054], line 13-14) and further comprising a plurality of corrosion suppression layers (page 11, section [0054], line 13-14, some of the layers are silver/palladium alloy which suppresses corrosion in an 11 layer stack) disposed between the dielectric layers and the metal layers; wherein the metal layers comprise a first metal (Ag) having a first galvanic potential and the corrosion suppression layers include a second metal (silver/palladium alloy) having a second galvanic potential, the second galvanic potential being greater than the first galvanic potential (Ag vs. silver/palladium alloy); wherein a first corrosion-suppressing layer (a silver/palladium alloy layer) separates one of the dielectric layers (e.g. indium oxide) from a metal layer (Ag) and wherein a second corrosion-suppressing layer (another silver/palladium alloy layer) separates another of the dielectric layers (e.g. indium oxide) from said metal layer (Ag in an 11 layer stack).

Regarding claim 8, Saito et al. further disclose a transmission-enhancing coating, which is an anti-reflective coating, disposed on a second surface of the substrate (page 11, section [0052], lines 4-7).

Regarding claim 34, Saito et al. further disclose wherein the infrared filter has a low wavelength shift with angle of incidence (in at least so far as when the angle of incidence is 0 degrees the wavelength shift will also be 0 degrees which is low).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Saito et al.

Saito et al. disclose the claimed invention except for the thickness of the metal layer being less than 25 nm. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the metal layer less than 25 nm thick, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering an optimum value or working ranges involves only routine skill in the art. One would have been motivated to make the metal layer less than 25 nm thick for the purpose of providing a smaller and lighter filter to keep the devices that it is added to compact. *In re Aller*, 220 F.2d 454, 456 105 USPQ 233, 235.

6. Claims 9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Speier et al., US 6,390,972 B1 in view of Saito et al.

Speier et al. disclose a photodetector assembly (fig. 9) comprising a photodetector array (32) being disposed inside a package (212) of the photodetector assembly, a lid (209), which is an IR filter and a blur filter disposed in the IR filter (column 9, lines 41-44). Speier et al. discloses the claimed invention except for the IR filter having the characteristics as detailed in claim 1. Saito et al. teaches an IR filter having the characteristics as detailed in claim 1 (set forth above). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use replace the IR filter of Speier et al. with the one of Saito et al. to achieve high transmission in the visual range while preventing damaging IR rays (Saito, page 1, section [0002], lines 9-17).

7. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Saito et al. in view of Miyazaki et al., US 5,419,969.

Although Saito et al. further disclose that the IR filter is created with sputtering (page 11, section [0054], line 8-10), Saito et al. do not explicitly state that the filter has been thermally treated at a temperature above 200 degrees C. Miyazaki et al. teach that multilayer films with dielectric and metal layers are commonly created with sputtering wherein the filter has been thermally treated at a temperature above 200 degrees C (column 9, lines 61-65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the sputtering technique (i.e. thermally treated at a temperature above 200 degrees C) of Miyazaki et al. to make the filter of Saito et al. as it is a reliable, commonly available method.

8. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Speier et al., US 6,390,972 B1 in view of Braatz et al, US 5,591,529.

Speier et al. disclose a photodetector assembly (fig. 9) comprising a photodetector array (32) being disposed inside a package (212) of the photodetector assembly, a lid (209), which is an IR filter and a blur filter disposed in the IR filter (column 9, lines 41-44). Speier et al. discloses the claimed invention except for the IR filter comprising: a substrate, an optical filter stack disposed on a first surface of the substrate, the optical filter stack including a plurality of dielectric layers, and a plurality of metal layers alternating with the dielectric layers; and a transmission-enhancing coating, wherein the infrared filter obtains an average transmission greater than or equal to 75% between 400 nm and 600 nm. Braatz et al. teaches an infrared (IR) filter (figure) comprising: a substrate (Substrate) an optical filter stack (Oxide, Ag and Blocker) disposed on a first surface of the substrate (figure), the optical filter stack including a plurality of dielectric layers (Oxide layers), and a plurality of metal layers (Ag layers) alternating with the dielectric layers (figure); and a transmission-enhancing coating (at least the top Oxide layer), which is an anti-reflective coating, wherein the infrared filter obtains an average transmission greater than or equal to 75% between 400 nm and 600 nm (see at least examples 2 and 3). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use replace the IR filter of Speier et al. with the one of Braatz et al. to achieve high transmission in the visual range while preventing damaging IR rays.

Allowable Subject Matter

9. Claims 5-7, 23-24, 26-29 and 32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter:

Claims 5-7 and 24 have allowable subject matter over the prior art for at least the reason that the prior art fails to teach and/or suggest "wherein the dielectric layers comprise Nb_2O_5," and "wherein the infrared filter obtains an average transmission greater than or equal to 75% between 400 nm and 600 nm" as set forth in the claimed combination.

Saito et al. disclose an infrared (IR) filter (pages 10-11, section [0051]) comprising: a substrate (page 11, section [0054], line 9) an optical filter stack disposed on a first surface of the substrate (page 11, section [0054]), the optical filter stack including a plurality of dielectric layers (page 11, section [0054], line 8-10), and a plurality of metal layers (page 11, section [0054], line 8-10) alternating with the dielectric layers, wherein the infrared filter obtains an average transmission greater than or equal to 75% between 400 nm and 600 nm (page 11, section [0054], line 3-4) but does not have wherein the dielectric layers comprise Nb_2O_5 as claimed.

It is noted that prior art like Pass et al., US 5,510,173 and Guiselin et al., US 6,287,675 B1 teach using Nb_2O_5 in IR filter stacks but it is not obvious that the combination will have an average transmission greater than or equal to 75% between 400 nm and 600 nm as claimed.

Claims 23, 26-29 and 32 have allowable subject matter over the prior art for at least the reason that the prior art fails to teach and/or suggest "wherein the stack of layers are of the form D1/C1/M1/C2/D2, wherein D1 is a first dielectric layer, C1 is a first corrosion-suppressing layer, M1 is a first metal layer, C2 is a second corrosion-suppressing layer, and D2 is a second dielectric layer" and "at least four metal layers" as set forth in the claimed combination.

Saito et al. disclose an infrared (IR) filter (pages 10-11, section [0051]) comprising: a substrate (page 11, section [0054], line 9) an optical filter stack disposed on a first surface of the substrate (page 11, section [0054]), the optical filter stack including a plurality of dielectric layers (page 11, section [0054], line 8-10), and a plurality of metal layers (page 11, section [0054], line 8-10) alternating with the dielectric layers, and a plurality of corrosion suppression layers (page 11, section [0054], line 13-14, some of the layers are silver/palladium alloy which suppresses corrosion in an 11 layer stack) but does not suggest the form D1/C1/M1/C2/D2 with at least four metal layers as claimed.

Response to Arguments

11. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

12. Applicant's arguments regarding new claim 35 (old claim 11) filed 27 February 2006 have been fully considered but they are not persuasive.

Applicant argues that replacing the IR filter of Speier with that of Braatz would not be obvious because the sensor would be less effective because it would suffer from a lower signal to

noise ratio (see remarks, page 14, paragraphs 2 and 3). In response to applicant's argument, the fact that applicant believes that there may be a disadvantage in one aspect of the filter does not outweigh that the filter may perform better in other aspects and therefore does not prevent an obvious type rejection. The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). Finally, it is noted that the features upon which applicant relies (i.e., signal to noise ratio) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

13. It is noted by the Examiner that the specification and claim objections made in the previous Office Action have been withdrawn due to amendment by the Applicant.

Conclusion

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lee Fineman whose telephone number is (571) 272-2313. The examiner can normally be reached on Monday - Friday 7:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MARK A. ROBINSON
PRIMARY EXAMINER

LAF
4 May 2006